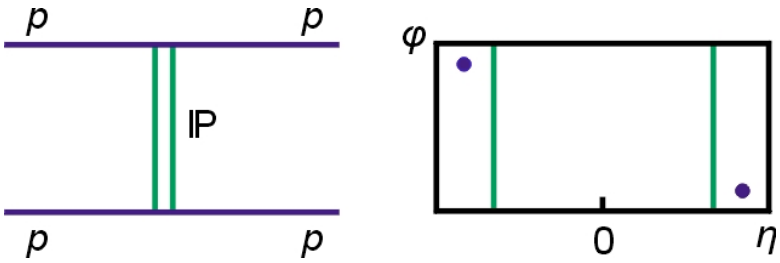
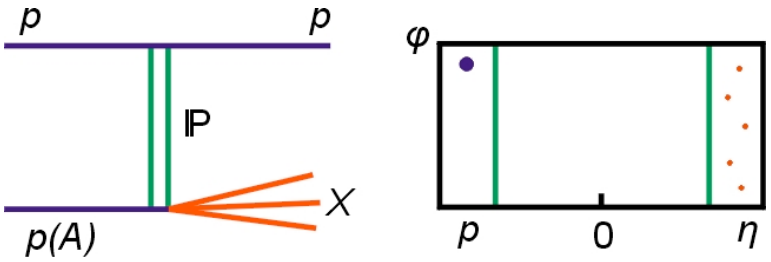
Physics with Tagged Forward Protons and the STAR Detector in Run 9

(AKA pp2pp)

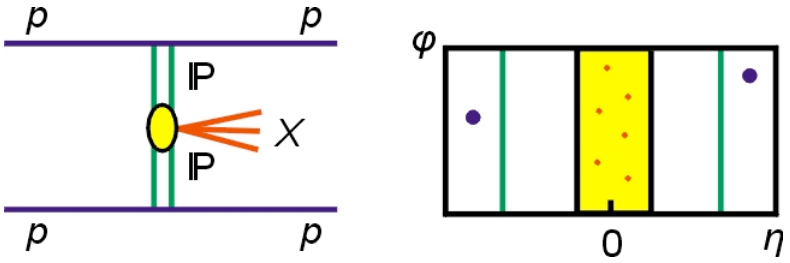


Elastic Scattering



Single Diffraction Dissociation

Discovery Physics:
Glueball Search



Central Production in DPE Process

All processes require measuring protons scattered at small angles, hence special optics reuqired

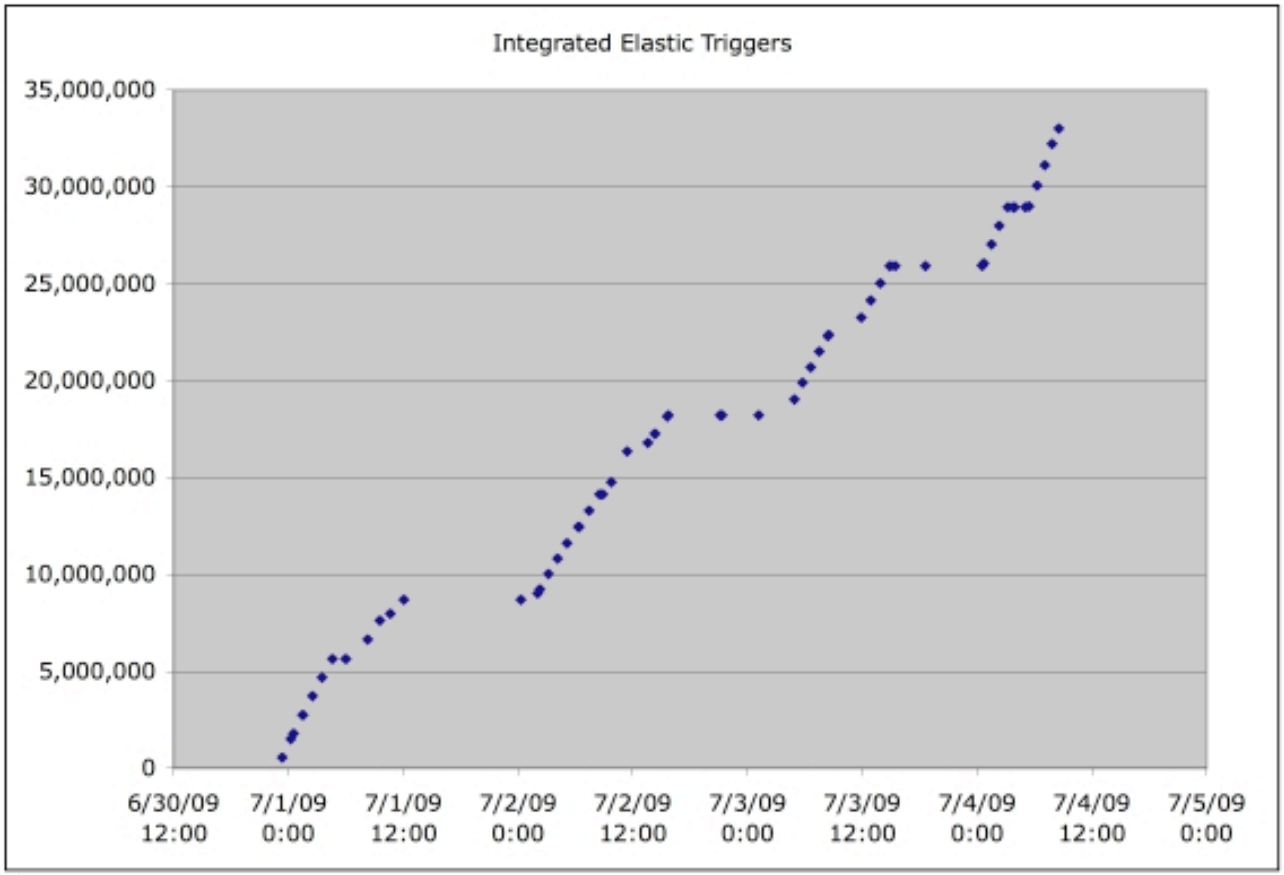
THANK YOU!

- We had a tremendous run which demonstrated that RHIC is a fantastic place to do this physics.

- Since the experiment is so much connected with the accelerator itself the contributions from C-AD personnel were critical to our success.

On behalf of the team I'd like to thank all those who contributed to our success, congratulations to you!

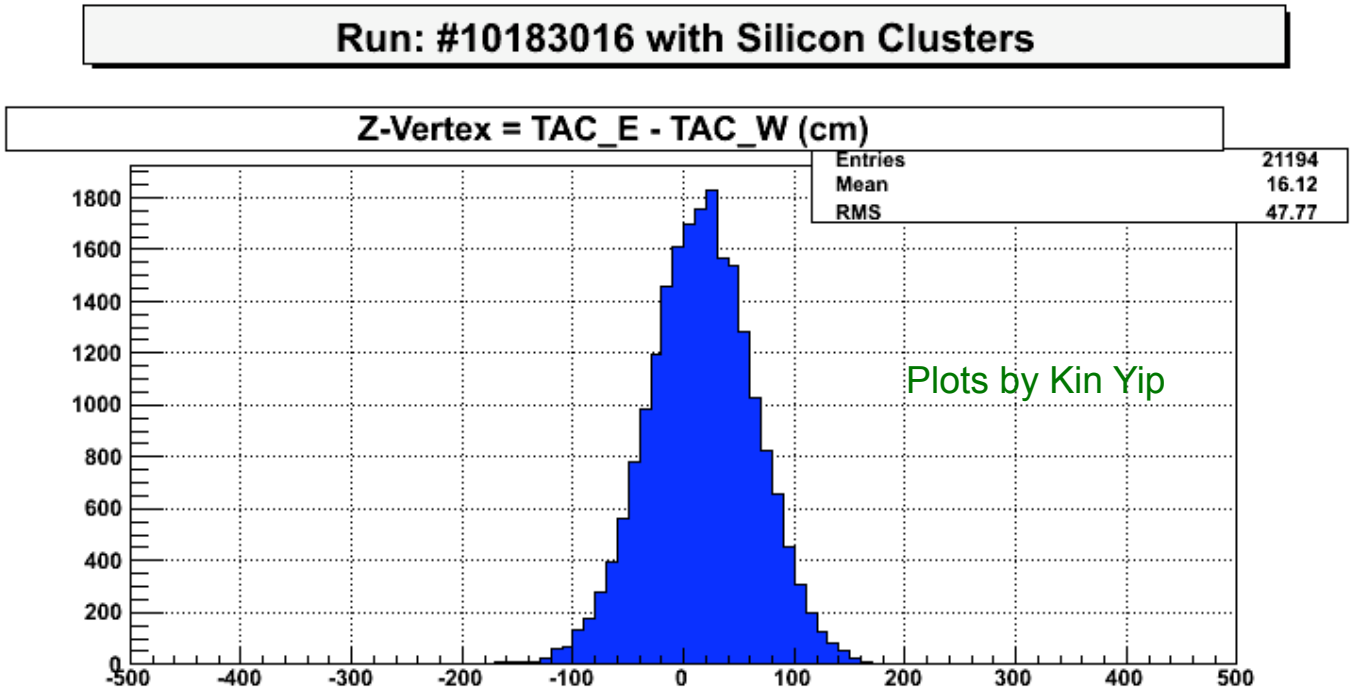
Integrated Elastic Triggers



Integrated Elastic Triggers vs RP Position

z-vertex distribution from trigger counters

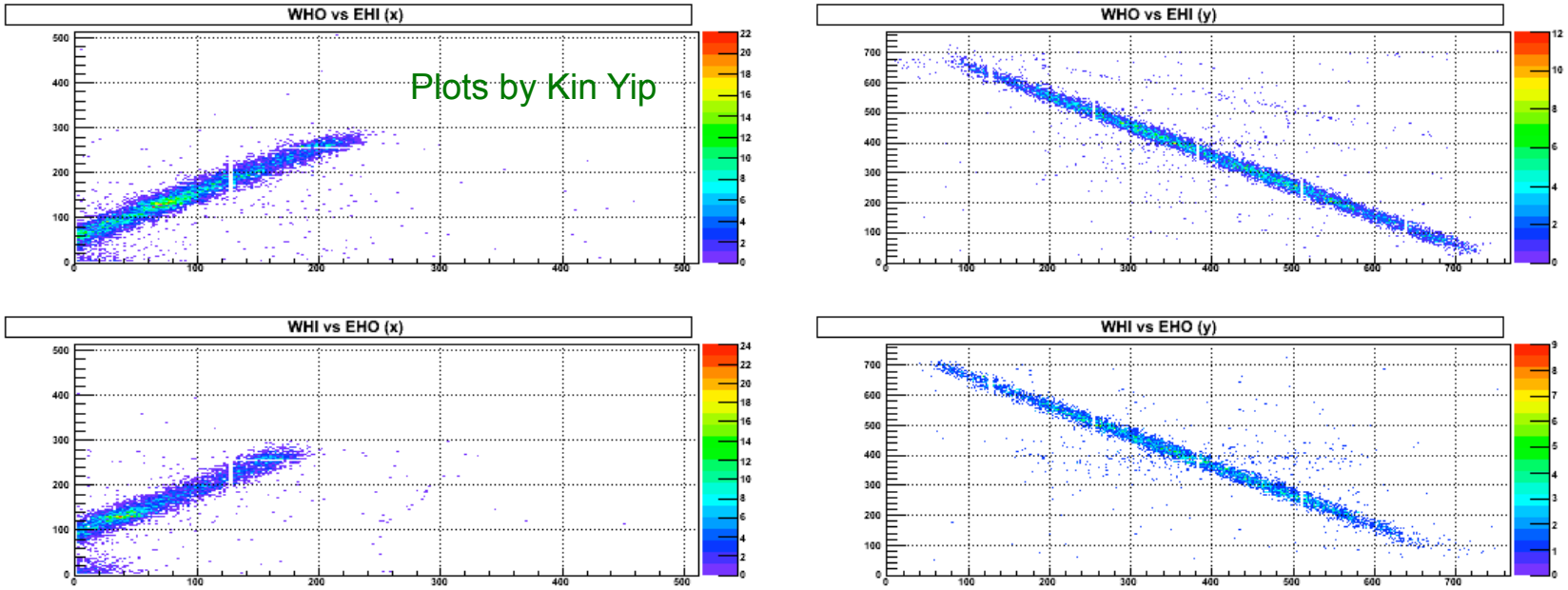
(No corrections)



Colinearity of candidate elastic events

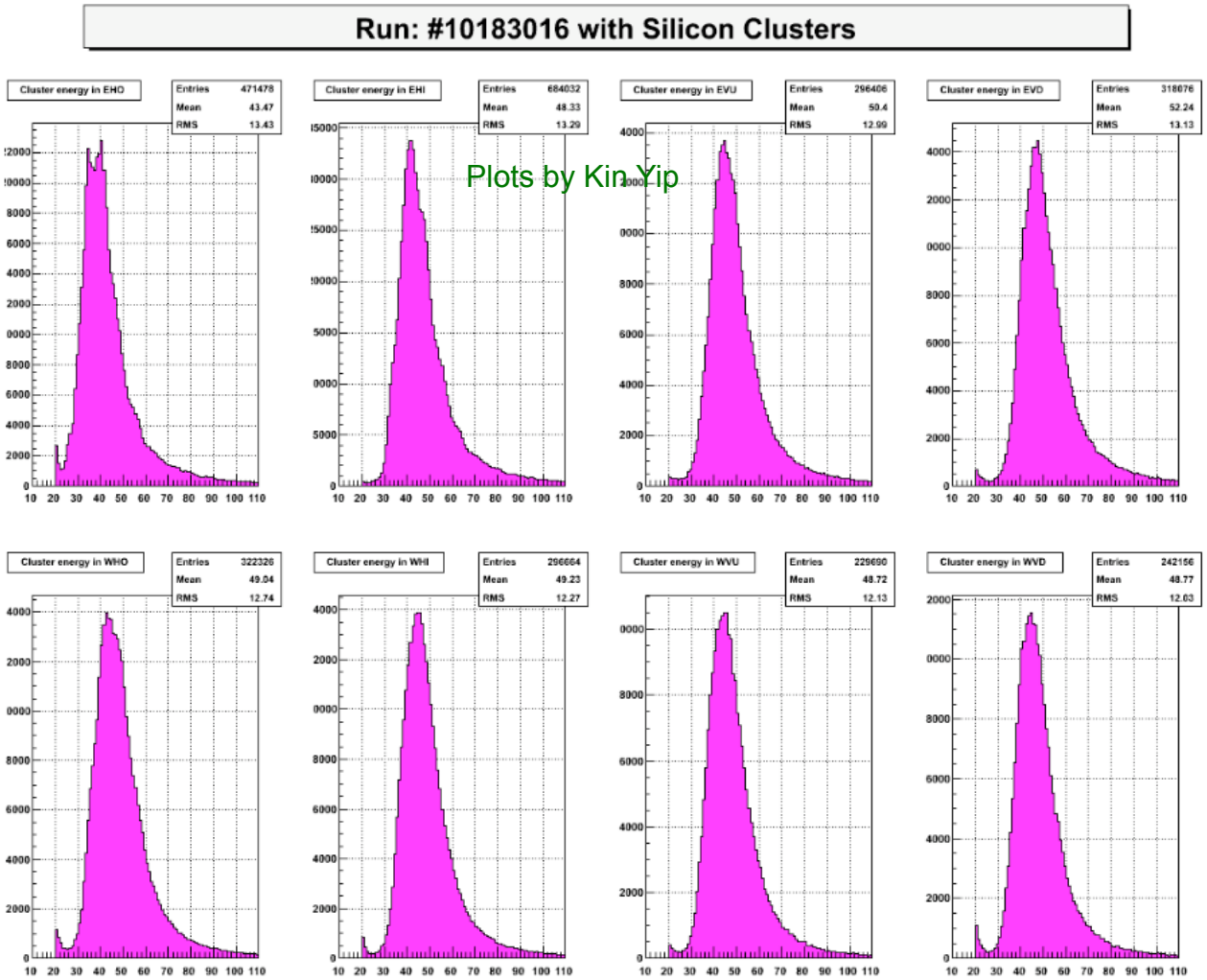
(We have a very good data sample!)

Run: #10183016 with Silicon Clusters

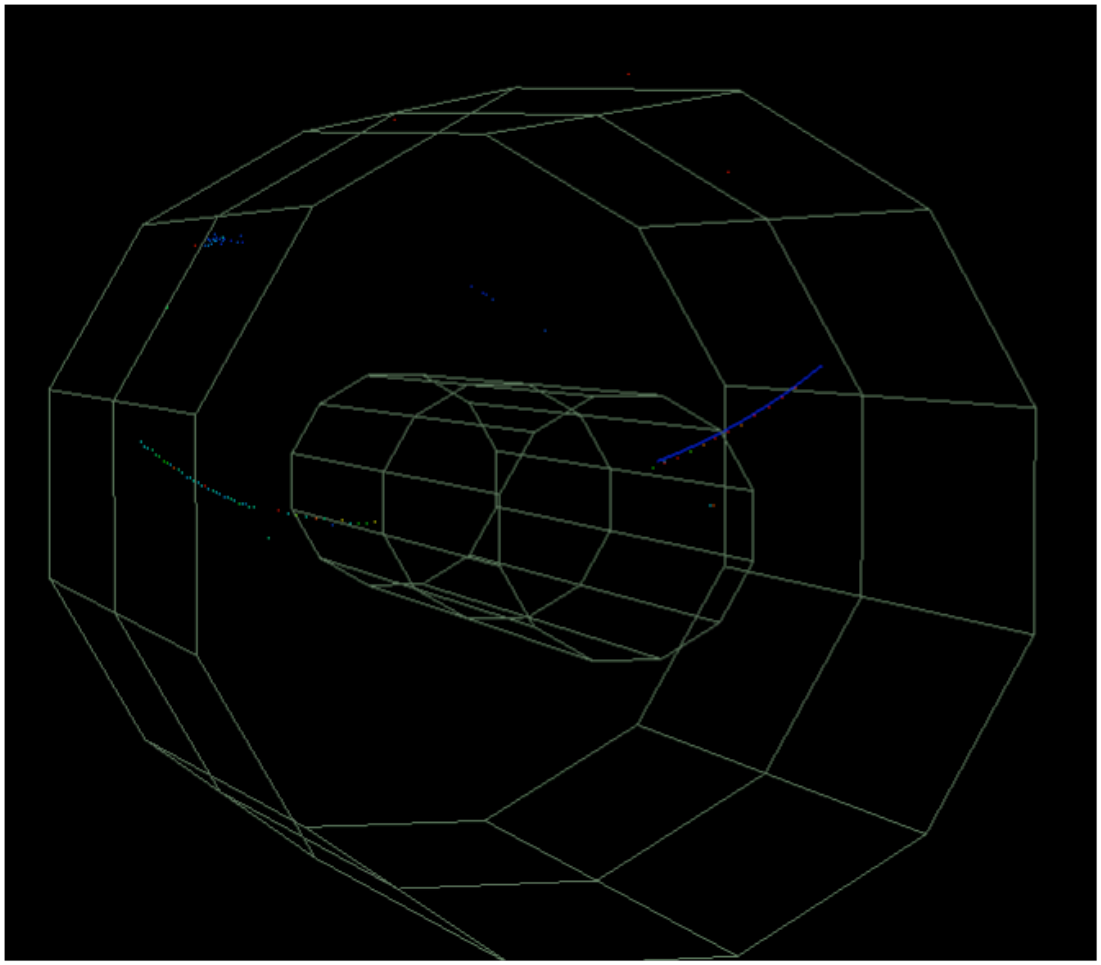


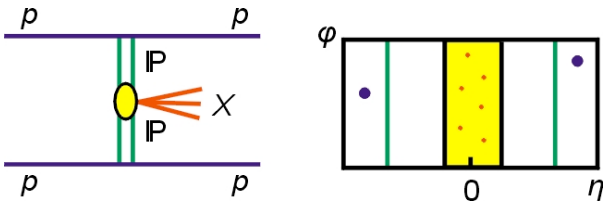
dE/dx distribution in Si

Signal to noise > 30:1



Candidate Central Production Event

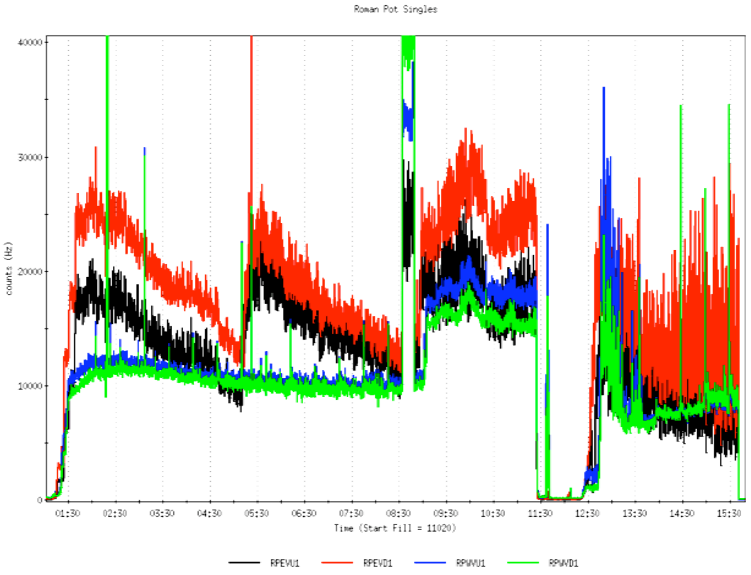


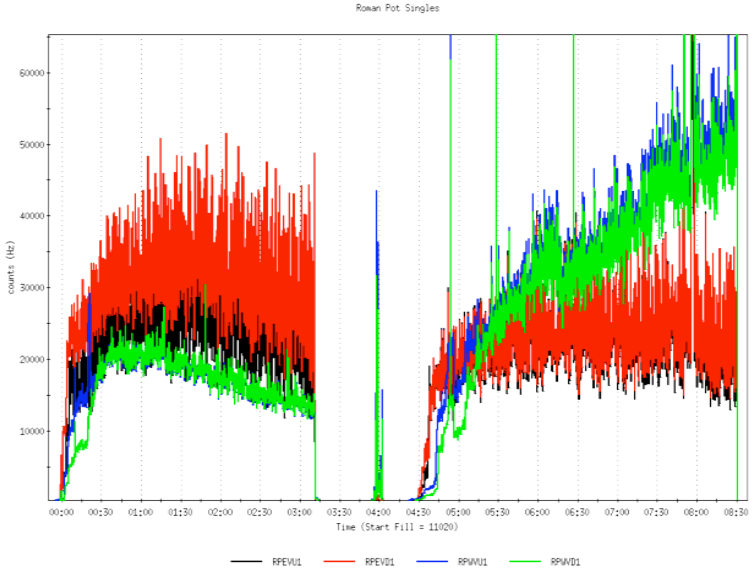


Discovery Physics Glueball Search

Some Lessons Learned

1. We saw two components of the beam life time – 7%/hr changing to 3%/hr
2. We saw the 20-30 sec oscillation in the last two stores very prominently





THANK YOU AGAIN!

- We will focus now on data analysis.
- There is more to do to fully explore physics potential and discovery possibilities at RHIC
- Each proton run at RHIC allows to expand our research

We'll be back, there is so much more to do!